FIG. 1A

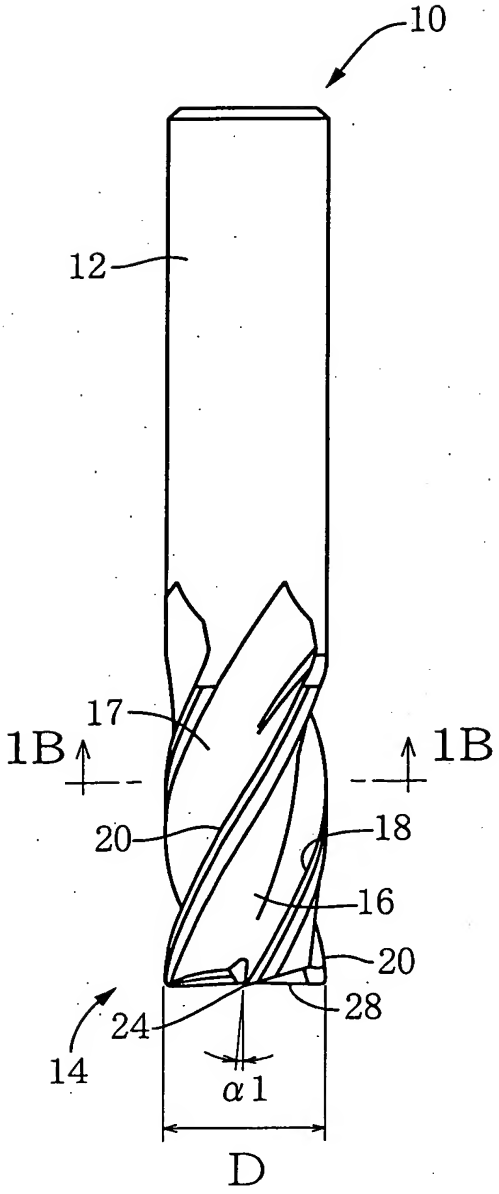


FIG. 1B

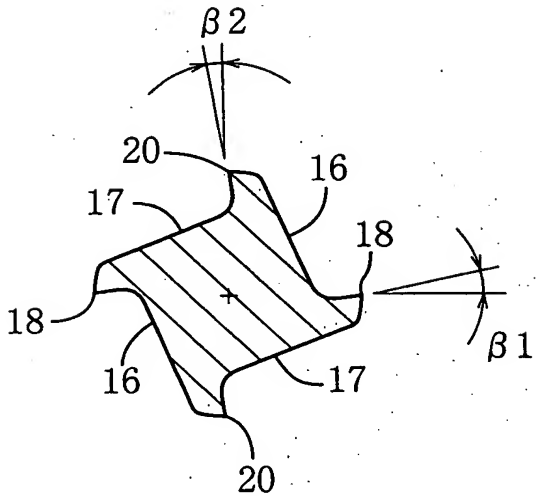


FIG. 1C

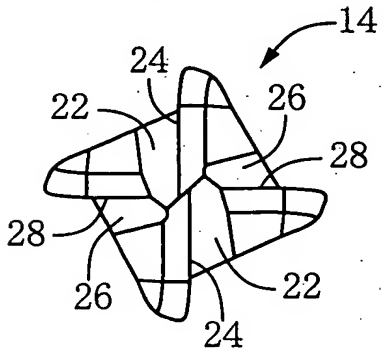


FIG. 1D

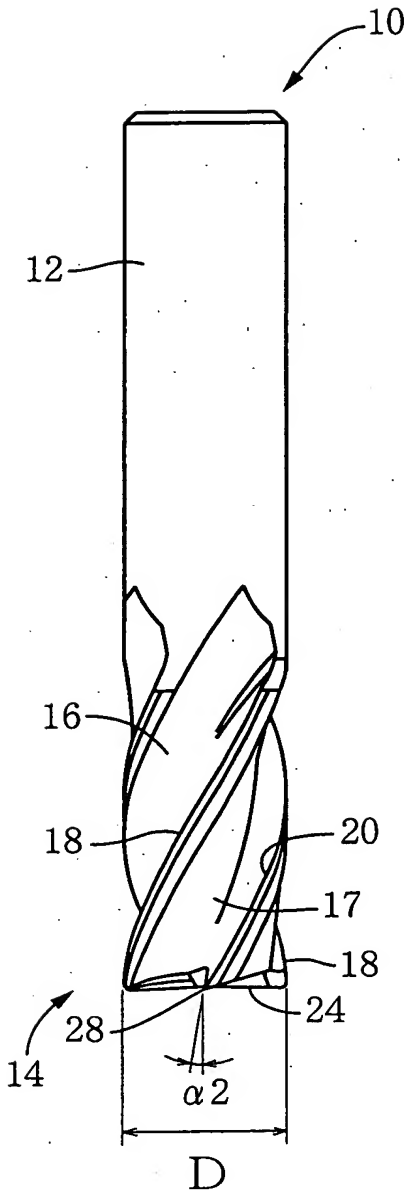


FIG. 2A

FACTORS	LEVEL 1	LEVEL 2
A:RADIAL RAKE ANGLE	$\beta 1=6°, \beta 2=0°$	$\beta 1=15°, \beta 2=6°$
B:AXIAL RAKE ANGLE	$\alpha 1=0°, \alpha 2=6°$	$\alpha 1=3°, \alpha 2=3°$
C:CORE DIAMETER	cd1=0.6D, cd2=0.7D	cd1=0.65D, cd2=0.65D
D:MATERIAL	CEMENTED CARBIDE a	CEMENTED CARBIDE b

FIG. 2B

TRIAL PRODUCTS	A	B	A×B	C	A×C	e	D
No 1	1	1	1	1	1	1	1
No 2	1	1	1	2	2	2	2
No 3	1	2	2	1	1	2	2
No 4	1	2	2	2	2	1	1
No 5	2	1	2	1	2	1	2
No 6	2	1	2	2	1	2	1
No 7	2	2	1	1	2	2	1
No 8	2	2	1	2	1	1	2

FIG. 2C

TRIAL PRODUCTS	RADIAL RAKE ANGLE		AXIAL RAKE ANGLE		CORE DIAMETER		MATERIAL
	$\beta 1$	$\beta 2$	$\alpha 1$	$\alpha 2$	cd1	cd2	
No 1	6°	0°	0°	6°	0.6D	0.7D	CEMENTED CARBIDE a
No 2	6°	0°	0°	6°	0.65D	0.65D	CEMENTED CARBIDE b
No 3	6°	0°	3°	3°	0.6D	0.7D	CEMENTED CARBIDE b
No 4	6°	0°	3°	3°	0.65D	0.65D	CEMENTED CARBIDE a
No 5	15°	6°	0°	6°	0.6D	0.7D	CEMENTED CARBIDE b
No 6	15°	6°	0°	6°	0.65D	0.65D	CEMENTED CARBIDE a
No 7	15°	6°	3°	3°	0.6D	0.7D	CEMENTED CARBIDE a
No 8	15°	6°	3°	3°	0.65D	0.65D	CEMENTED CARBIDE b

FIG. 3

TYPE OF TEST	PERFORMANCE TEST	DURABILITY TEST
WORK MATERIAL	SUS 304	
CUTTING PATTERN	SLOTTING	
CUTTING FLUID	WATER SOLUBLE FLUID	
NUMBER OF REVOLUTIONS	1900~4852min^{-1}	4852min^{-1}
FEED RATE	380~970mm/min	776mm/min
DEPTH OF CUT (AXIAL DEPTH)	0.5D~1D	1D

FIG. 4

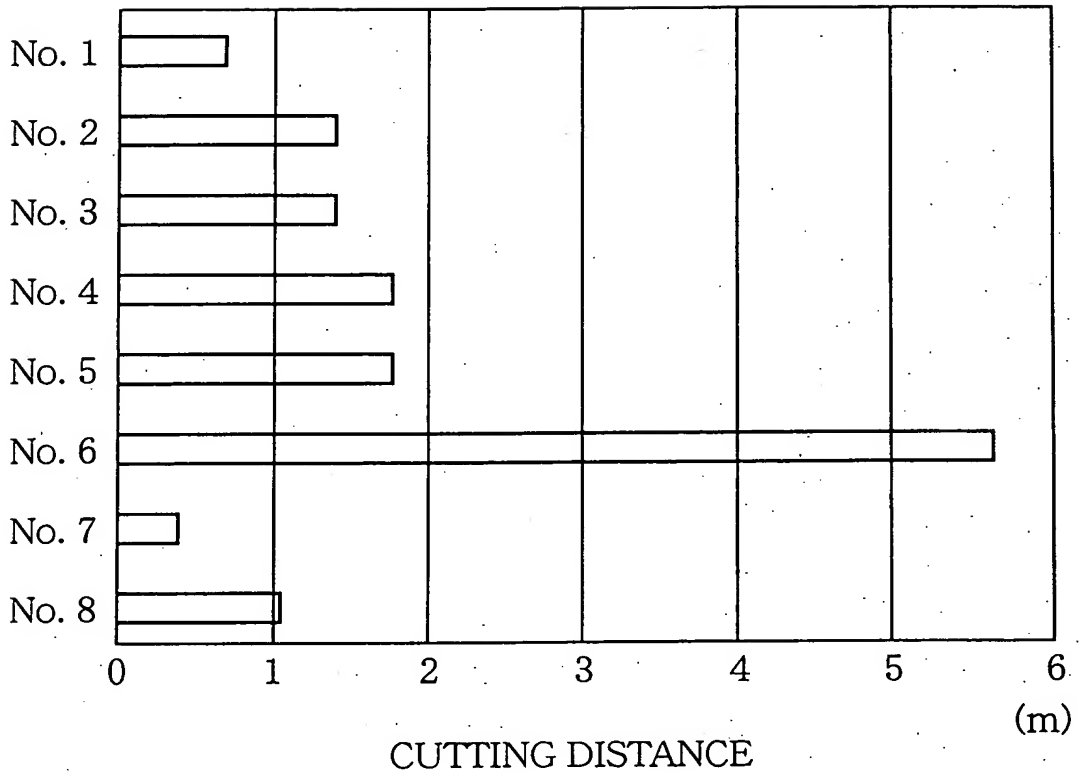


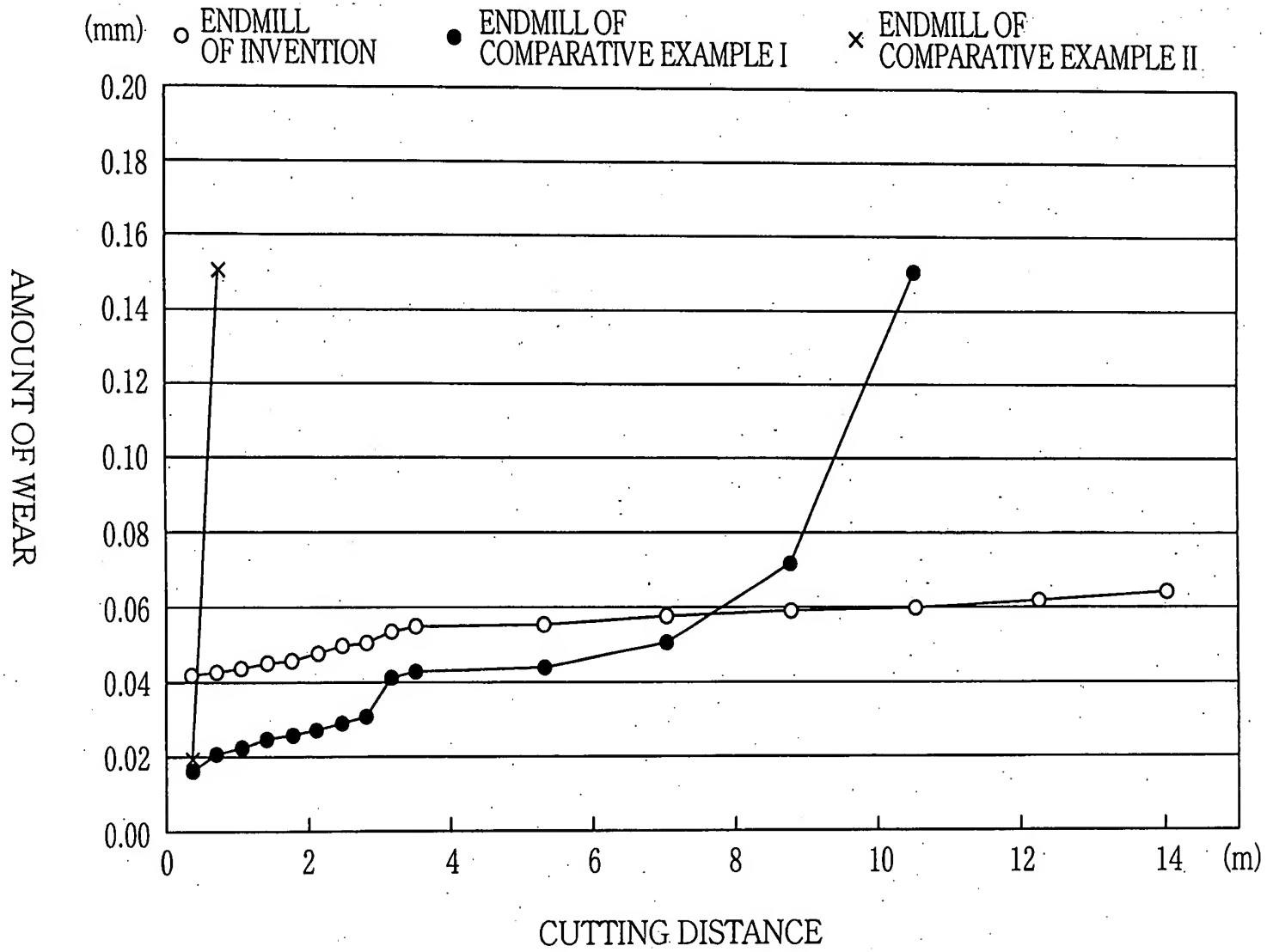
FIG. 5

FACTORS	SUM OF SQUARES	DEGREE OF FREEDOM	VARIANCE	F 0	PROBABILITY
RADIAL RAKE ANGLE (A)	1.531	1	1.531	1.22	0.385
AXIAL RAKE ANGLE (B)	3.001	1	3.001	2.39	0.262
CORE DIAMETER (C)	3.92	1	3.92	3.122	0.219
A×B	6.125	1	6.125	4.878	0.158
A×C	1.531	1	1.531	1.22	0.385
ERROR (e)	2.511	2	1.256		
SUM	18.62	7			

FIG. 6

	ENDMILL OF THE INVENTION	ENDMILL OF COMPARATIVE EXAMPLE I	ENDMILL OF COMPARATIVE EXAMPLE II
NUMBER OF FLUTES	4	3	4
RADIAL RAKE ANGLE	$\beta 1=15°$, $\beta 2=6°$	$\beta 1=18°$, $\beta 2=18°$	$\beta 1=6°$, $\beta 2=6°$
AXIAL RAKE ANGLE	$\alpha 1=0°$, $\alpha 2=6°$	$\alpha 1=2°$, $\alpha 2=2°$	$\alpha 1=3°$, $\alpha 2=3°$
CORE DIAMETER	cd1=0.65D, cd2=0.65D	cd1=0.45D, cd2=0.45D	cd1=0.67D, cd2=0.67D
HELIX ANGLE	40°	35°	50°

FIG. 7


(mm)
ENDMILL OF INVENTION
ENDMILL OF COMPARATIVE EXAMPLE I
ENDMILL OF COMPARATIVE EXAMPLE II
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
AMOUNT OF WEAR
0
2
4
6
8
10
12
14
(m)
CUTTING DISTANCE